

CLAIMS

1. Support system (1) for an apparatus of the type suitable to treat substrates and/or wafers, comprising:

- a fixed base element (10) having a substantially flat surface in which a substantially cylindrical seat (11) with a substantially flat bottom is formed, and
- a movable support element (20) having a substantially disc-shaped form, being housed inside the seat (11), being able to rotate about the axis of the seat (11) and having a substantially flat upper side provided with at least one cavity (21) for a substrate or wafer and a substantially flat bottom side;

characterized in that it comprises one or more passages (12) for one or more gas flows, in which said passages (12) emerge inside the seat (11) in directions which are inclined and preferably skew with respect to said axis, in such a way as to lift and rotate the support element (20).

2. System according to Claim 1, wherein the support element (20) is designed to remain substantially inside the seat (11), preferably with its upper side substantially aligned with the surface of the base element (10) both when it is stationary and when it is in movement.

3. System according to Claim 1 or 2, wherein an annular channel (13) for collecting the gas emitted from the passages (12), is formed in the seat (11).

4. System according to Claim 1 or 2 or 3, wherein the passages (12) are branches of the same pipe (14).

5. System according to one of the preceding claims, wherein the passages (12) are only two and are arranged in symmetrical positions with respect to said axis.

6. System according to anyone of the preceding claims, wherein a pin and a corresponding hole are provided for guiding the rotation of the support element (20).

7. System according to Claim 6, wherein a cylindrical protuberance with a cylindrical hole is provided in the centre of the seat of the base element (10), in which a cylindrical recess with a cylindrical pin is provided in the centre of the bottom side of the support element (20) and in which the pin of the support element is inserted in the hole of the base element and the protuberance of the

base element is inserted in the recess of the support element.

8. System according to one of the preceding claims, wherein the bottom side of the support element (20) is provided with depressed areas (22) shaped so that the gas flows emerging from the passages (12) exert a thrust thereon, said areas (22) being preferably all identical and arranged symmetrically with respect to said axis.

9. System according to Claim 8, wherein said areas (22) are bounded by three or four sides.

10. System according to Claim 9, wherein said areas (22) have at least one straight side.

11. System according to Claim 9 or 10, wherein said areas (22) have at least one curved side.

12. System according to Claim 9 or 10 or 11, wherein said areas (22) have a variable depth.

13. System according to Claim 12, wherein the depth of said areas (22) diminishes or increases in the radial direction with respect to the axis of rotation.

14. System according to Claim 12 or 13, wherein the depth of said areas diminishes or increases in the tangential direction with respect to the axis of rotation.

15. System according to one of Claims 8 to 14, wherein said areas (22) reach the edge of the bottom side of the support element (20).

16. System according to Claim 15, wherein one side of said areas (22) coincides with a section of the edge of the bottom side of the support element (20).

17. System according to one of Claims 8 to 16, wherein said areas (22) have an edge, said edge being positioned and shaped in such a way that the gas flows emerging from the passages (12) exert a thrust on said edge.

18. System according to one of the preceding claims, wherein the support element (20) is able to act also as a susceptor.

19. System according to one of the preceding claims, characterized in that it is suitable for loading/unloading of the support element (20) into/from the base element (10).

20. Reactor for epitaxial growth of semiconductor materials on substrates, characterized in that it comprises a support system for substrates according to anyone of Claims 1 to 19.

21. Apparatus for high-temperature thermal treatment of wafers, characterized in that it comprises a support system for wafers according to anyone of Claims 1 to 19.

22. Support element (20) for an apparatus of the type designed to treat substrates and/wafers, having a substantially disc-shaped form with a substantially flat upper side provided with at least one cavity (21) for a substrate or wafer and with a substantially flat bottom side, characterized in that the bottom side is provided with depressed areas (22) shaped to receive the thrust of gas flows.

23. Element according to Claim 22, wherein said areas (22) are bounded by three or four sides.

24. Element according to Claim 23, wherein said areas (22) have at least one straight side.

25. Element according to Claim 22 or 23, wherein said areas (22) have at least one curved side.

26. Element according to Claim 22 or 23 or 24, wherein said areas (22) have a variable depth.

27. Element according to Claim 26, wherein the depth of said areas (22) diminishes or increases in the radial direction with respect to its axis.

28. Element according to Claim 27 or 28, wherein the depth of said areas (22) diminishes or increases in the tangential direction with respect to its axis.

29. Element according to one of Claims 22 to 28, wherein said areas (22) reach the edge of its bottom side.

30. Element according to Claim 29, wherein one side of said areas (22) coincides with a section of the edge of its bottom side.

31. Element according to one of Claims 22 to 30, wherein said areas (22) have an edge, said edge being positioned and shaped to receive the thrust of gas flows.

32. Element according to one of Claims 22 to 31, characterized in that

it is able to act also as a susceptor.